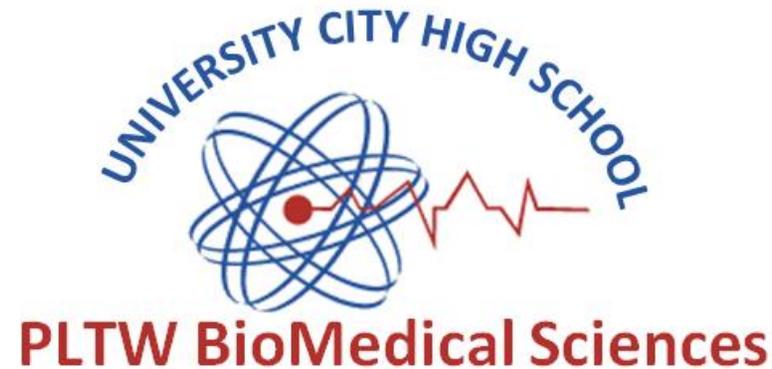
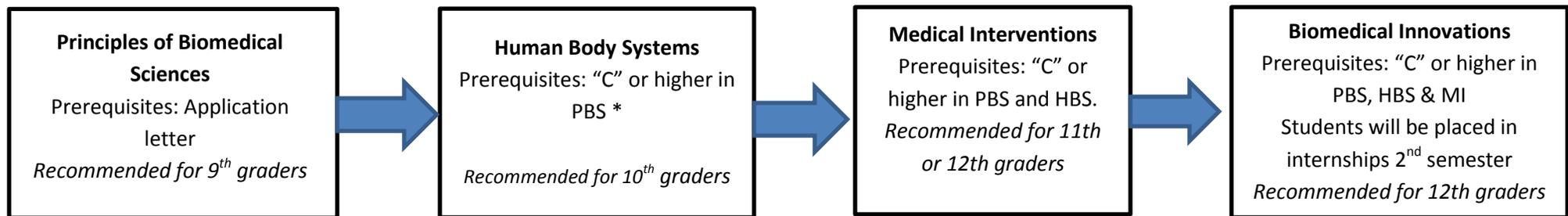


University City High School PLTW BMS Course Sequence



PBS, HBS and MI are eligible for "D" lab science credit which meets the 3rd year of science graduation requirement. In addition, MI students can receive college credit for **Biology 131: Introduction to Biotechnology** which is fully transferable in the CSU and UC system from Miramar College. *More info can be found here:* http://www.matsc.org/HS_Syllabi_Comps.htm



***In special circumstances, with counselor, administration, current science teacher and PLTW BMS teacher approval, a 10th grade student may be allowed to take HBS without meeting the PBS prerequisite course for taking PBS as a 9th grader. This students must have a "B" or better in Algebra and Biology. Please see the PLTW BMS teachers for forms.

University City High School PLTW BMS Course Sequence

PROGRAM COURSE DESCRIPTIONS



Principles of the Biomedical Sciences (PBS)

Student work involves the study of human medicine, research processes, an introduction to bioinformatics, and the use of computer science, mathematics, and information theory to model and analyze biological systems. Students investigate the human body systems and various health conditions including: heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. They determine the factors that led to the death of a fictional person, and investigate life-style choices and medical treatments that might have prolonged the person's life. Key biological concepts including homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease are embedded in the curriculum. Engineering principles including the design process, feedback loops, and the relationship of structure to function are incorporated in the curriculum. This course is designed to provide an overview of all the courses in the Biomedical Sciences program and lay the scientific foundation for subsequent courses.

Human Body Systems (HBS)

Students engage in the study of the processes, structures, and interactions of the human body systems. Important concepts in the course include: communication, transport of substances, locomotion, metabolic processes, defense, and protection. The central theme is how the body systems work together to maintain homeostasis and good health. The systems are studied as "parts of a whole," working together to keep the amazing human machine functioning at an optimal level. Students design experiments, investigate the structures and functions of body systems, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respiratory operation. Students work through interesting real-world cases and play the role of biomedical professionals to solve medical mysteries.

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University City High School PLTW BMS Course Sequence

Medical Interventions (MI)

Students investigate a variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a “How-To” manual for maintaining overall health and homeostasis in the body as students explore how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. These scenarios expose students to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Each family case scenario introduces multiple types of interventions and reinforces concepts learned in the previous two courses, as well as presenting new content. Interventions may range from simple diagnostic tests to treatment of complex diseases and disorders. These interventions are showcased across generations of a family and provide a look at the past, present and future of biomedical sciences. Lifestyle choices and preventive measures are emphasized throughout the course as are the important roles scientific thinking and engineering design play in the development of interventions of the future.

Biomedical Innovation (BI)

Students apply their knowledge and skills to answer questions and solve problems related to the biomedical sciences. In this capstone course, they will be participating internships with a mentor or advisor from a university, hospital, physician’s office, or industry. Students are expected to present the results of their work to an adult audience, which may include representatives from the local healthcare or business community or the school’s Partnership Team.

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